

AMENDED CLAIMS

[received by the International Bureau on 16 May 2005 (16.05.05);
original claim 22 amended; rest claims remain unchanged (2 pages)]

22. A method of detecting the presence or absence of hybrid mRNA in a plant or animal comprising the steps of:
- 5 (i) isolating mRNA from a plant or animal;
- (ii) comparing the nucleotide sequence of said mRNA to the corresponding coding sequences of the plant or animal's alleles; and
- (iii) determining whether or not the mRNA sequence comprises nucleotide sequences from two or more different exons.
- 10
23. A construct comprising a synthetic gene comprising exons from different alleles of a gene, wherein
- 15 said exons code for amino acid sequence variation found in only one allele, such that said synthetic gene does not contain a nucleotide sequence that is the same as either allele and is capable of producing hybrid mRNA.
- 20 24. Use of hybrid mRNA produced by a construct according to claim 23 to overcome hybrid debility in a plant or animal and/or induce hybrid vigour in a plant or animal comprising the step of introducing said hybrid mRNA into said animal or plant.
- 25
25. Use according to claim 24, wherein the step of introducing said hybrid mRNA into said animal or plant is by transformation.
- 30 26. Use according to claim 25, wherein the step of transformation into a plant is selected from the group consisting of homologous recombination, microprojectile bombardment, PEG mediated transformation, electroporation, silicon carbide fibre mediated transformation, or
- 35 Agrobacterium-mediated transformation.
27. A method for producing genetically engineered or

transgenic non-human animal by inserting a synthetic gene into a non-human somatic cell or cell nucleus prior to transferring the somatic cell or cell nucleus, wherein said synthetic gene comprises exons from different alleles 5 of a gene, wherein said alleles code for amino acid sequence variation, wherein the variation does not occur in the same allele.

28. A genetically engineered or transgenic animal 10 obtained by a method according to claim 27.

29. A method according to claim 27, wherein the animal cells are isolated from a mammal and fish.